Washington State Department of Health

ENVIRONMENTAL HEALTH

May, 2003

Fact Sheet

Cadet Manufacturing Company, Vancouver, WA

Health Consultation – Indoor Air Quality Evaluation

Health Consultation Completed

The Washington State Department of Health (DOH) has completed an evaluation of the potential human health risks associated with chemicals detected in indoor air at some buildings above contaminated groundwater near the Cadet Manufacturing Company.

Site Background

The Cadet Manufacturing Company is located at 2500 W. Fourth Plain Boulevard in a mixed industrial, commercial, and residential area of Vancouver, Washington. The Cadet property has been used for manufacturing electric home heaters since 1964. Part of that manufacturing process included degreasing metal parts with chlorinated solvents. Cadet discontinued the use of this cleaning process in 1976.

Chlorinated solvents used by Cadet were released into the environment and are now found in soil and dissolved in groundwater below the facility. Solvent contaminated groundwater also moved under a portion of the Fruit Valley Neighborhood (FVN), a residential community that borders Cadet to the east.

In August 2001, Cadet conducted sampling in the FVN that showed chlorinated solvents dissolved in shallow groundwater are vaporizing (evaporating) and moving up through the soil. Because the chlorinated solvent vapors could move into indoor air through cracks or other openings in building foundations and pose a health risk, DOH recommended that indoor air samples be collected from buildings located in the FVN.

Cadet collected indoor air samples in January 2002 from 30 FVN homes, a day care facility, and the Fruit Valley elementary school. The samples were collected in living spaces, basements, and crawlspaces and analyzed for chlorinated solvents including trichloroethylene (TCE) and tetrachlorethylene (PCE). In August 2002, Cadet resampled seven homes that had the highest levels of these chemicals to determine if the change in seasons makes a difference.

Contaminants evaporating from groundwater and moving up through the soil. (Graphic courtesy of EnviroGroup Limited.)

Chlorinated solvents are commonly found in outdoor and indoor air in urban and rural environments. Because outdoor air moves into buildings through windows, vents, and doors, some of these chemicals detected in indoor air are associated with outdoor sources. Other sources of chlorinated solvents in indoor air include common cleaning products, dry cleaned clothes, building materials, carpeting and paints.

Contaminants of Concern

The primary contaminants of concern are chlorinated solvents. Chlorinated solvents are a group of chemicals found in paints, used for industrial degreasing and household cleaning products. Chlorinated solvents easily evaporate into the air.

At levels much higher than those found in indoor air near Cadet, TCE can affect the nervous and immune systems, liver, kidney and developing

fetus. Breathing low levels of chlorinated solvents is also a concern for long periods of exposure, occurring over many years, and can pose some risk for cancer.

Health Consultation Findings

1. Chlorinated solvents were detected in indoor air samples collected in the FVN. Solvents were higher in basements and crawlspaces than in living spaces, which suggests that the solvent vapor may be coming from groundwater. Common household cleaning products, paints, and dry-cleaned clothes may also be sources of these solvents in indoor air.

2. Chlorinated solvents found in indoor air in the FVN **are not an immediate or short-term health concern**. However, **long-term exposure** to the levels found in three of the tested homes is greater than what is normally expected. **While it is unlikely that people living in these homes will get sick, the levels are high enough to warrant action. DOH recommends that exposure to chlorinated solvents associated with contaminated groundwater at these three homes be eliminated.** The owners/occupants and the Washington Department of Ecology (Ecology) have been notified about these findings.

3. Many factors can affect the movement of solvents from groundwater to indoor air. To ensure that building occupants are not being exposed to harmful levels of these solvents in the future, **additional groundwater, soil gas, indoor air/outdoor air monitoring is needed in the FVN**.

4. Exposure to solvents moving from groundwater to indoor air could increase by activities like soil excavations, installation of basement sumps, blocking of crawl space vents, and installation of fans or air conditioners.

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